Effective Health Care

Treatments for Hip and Hand Osteoarthritis

Results of Topic Selection Process & Next Steps

The nominators, the American College of Rheumatology (ACR) and the American College of Physicians (ACP), are interested in an Agency for Healthcare Research and Quality (AHRQ) evidence review to update their 2012 guidelines on pharmacologic and non-pharmacological treatments for hip and hand osteoarthritis. Due to limited program resources, the Effective Health Care (EHC) program will not develop a review at this time. No further activity on this topic will be undertaken by the EHC Program.

Topic Brief

Topic Name: Treatments for Hip and Hand Osteoarthritis

Topic #: 0712

Nomination Date: October 28, 2016

Topic Brief Date: March 2017

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Conflict of Interest: None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

Summary of Key Findings

- Appropriateness and importance: The nomination is both appropriate and important.
- Duplication: An AHRQ systematic review on the treatments for hip and hand osteoarthritis (OA) would not be duplicative. We identified 12 complete or in-process reviews/meta-analyses—one review examining physical and occupational therapy for hand OA, and eleven complete or in-process evidence reviews/meta-analyses covering specific interventions for hip OA. The interventions examined in these eleven hip OA evidence reviews are platelet-rich plasma, opioid therapy, exercise and physical therapy, manual therapy, and high- and low-velocity resistance training. Most of the interventions of interest to the nominators are not included in these reviews.
- Impact: The nomination has moderate impact potential. The ACR published guidelines for nonpharmacological and pharmacologic therapies for hand, hip, and knee osteoarthritis in 2012, using GRADE and a panel consensus. An updated review could inform evidence gaps for recommendations that were not considered strong, particularly related to therapies for hand OA, hip OA. By the time an AHRQ evidence review on this topic will be complete, the ACR guidelines will be more than five years old and in need of updating.

- Feasibility: An AHRQ evidence review is feasible at this time.
    - *Size/scope of review:* We identified 93 studies potentially relevant to the key questions in the nomination.
    - *Clinicaltrials.gov:* We identified 23 ongoing or recently completed trials on ClinicalTrials.gov.
- Value: The nomination has a high value potential, given that the ACR and the ACP will jointly use a new AHRQ systematic review to update their 2012 guidelines.

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Introduction

Osteoarthritis (OA), the most common form of arthritis, is a degenerative joint disease that affects approximately 30.8 million Americans.[1] Symptoms of OA generally get worse with age and increased "wear and tear." Treatment for OA varies from exercise/weight loss, to pain medication, to joint replacement surgery.

Topic nomination #0712 was received on October 28, 2016. This nomination was submitted as a joint nomination by the American College of Rheumatology (ACR) and the American College of Physicians (ACP). While the nomination also mentions shoulder OA, we confined the scope to hip and hand OA because these were the focus of the proposed key questions. The key questions for this nomination are:

Key Question 1. What is the clinical effectiveness of therapies in patients with primary or secondary OA of the hip?

a. Pharmacologic
b. Non-pharmacologic
c. By duration and intensity
d. Subgroups

Key Question 2. What harms are associated with interventions in patients with primary or secondary OA of the hip?

a. Pharmacologic
b. Non-pharmacologic
c. By duration and intensity
d. Subgroups

Key Question 3. What is the clinical effectiveness of therapies in patients with primary or secondary OA of the hand?

a. Pharmacologic
b. Non-pharmacologic
c. By duration and intensity
d. Subgroups

Key Question 4. What harms are associated with interventions in patients with primary or secondary OA of the hand?

a. Pharmacologic
b. Non-pharmacologic
c. By duration and intensity
d. Subgroups

To define the inclusion criteria for the key questions we specify the population, interventions, comparators, and outcomes of interest. See Table 1.

Table 1. Key Question and PICOs

Key Question	1. What is the clinical effectiveness of therapies in patients with primary or secondary OA of the hip? a. Pharmacologic b. Non-pharmacologic c. By duration and intensity d. Subgroups	2. What harms are associated with interventions in patients with primary or secondary OA of the hip? a. Pharmacologic b. Non-pharmacologic c. By duration and intensity d. Subgroups	3. What is the clinical effectiveness of therapies in patients with primary or secondary OA of the hand? a. Pharmacologic b. Non-pharmacologic c. By duration and intensity d. Subgroups	4. What harms are associated with interventions in patients with primary or secondary OA of the hand? a. Pharmacologic b. Non-pharmacologic c. By duration and intensity d. Subgroups
Population	a. Adults with OA of the hip b. Adults with OA of the hip c. Adults with OA of the hip d. Adults with OA of the hip, by the following characteristics: sex, disease subtype (lateral, patellofemoral), severity (stage/baseline pain and functional status), weight status (body mass index), baseline fitness (activity level), comorbidities, prior or concurrent treatments (including self-initiated therapies)	a. Adults with OA of the hip b. Adults with OA of the hip c. Adults with OA of the hip d. Adults with OA of the hip, by the following characteristics: sex, disease subtype (lateral, patellofemoral), severity (stage/baseline pain and functional status), weight status (body mass index), baseline fitness (activity level), comorbidities, prior or concurrent treatments (including self-initiated therapies)	a. Adults with OA of the hand b. Adults with OA of the hand c. Adults with OA of the hand d. Adults with OA of the hand, by the following characteristics: sex, disease subtype, severity (stage/baseline pain and functional status), weight status (body mass index), baseline fitness (activity level), comorbidities, prior or concurrent treatments (including self-initiated therapies)	a. Adults with OA of the hand b. Adults with OA of the hand c. Adults with OA of the hand d. Adults with OA of the hand, by the following characteristics: sex, disease subtype, severity (stage/baseline pain and functional status), weight status (body mass index), baseline fitness (activity level), comorbidities, prior or concurrent treatments (including self-initiated therapies)
Interventions	a. Pharmacologic: duloxetine, intraarticular corticosteroids, intraarticular hyaluronic acid, intraarticular platelet-rich plasma/ultrasound-guided intraarticular injections of platelet-rich plasma, intramuscular corticosteroid injection, glucosamine and chondroitin sulfate, NSAIDs, COX-2-selctive inhibitors, tramadol, acetaminophen, tapentadol, opioid therapy, tanezumab, alendronate, avocado-soybean unsaponifiable-expanscience (ASU-E), low molecular weight hydrolyzed chicken sternal	a. Pharmacologic: duloxetine, intraarticular corticosteroids, intraarticular hyaluronic acid, intraarticular platelet-rich plasma/ultrasound-guided intraarticular injections of platelet-rich plasma, intramuscular corticosteroid injection, glucosamine and chondroitin sulfate, NSAIDs, COX-2-selctive inhibitors, tramadol, acetaminophen, tapentadol, opioid therapy, tanezumab, alendronate, avocado-soybean unsaponifiable-expanscience (ASU-E), low molecular weight hydrolyzed chicken sternal	a. Pharmacologic: duloxetine, topical therapy, DMARDs (Plaquenil, etc.), intraarticular corticosteroids, intraarticular hyaluronic acid, intraarticular platelet-rich plasma/ultrasound-guided intraarticular injections of platelet-rich plasma, doxycycline treatment for erosive osteoarthritis of the hand, glucosamine and chondroitin sulfate, NSAIDs, topical NSAIDs, COX-2-selctive inhibitors, diacerein, arnica (topical), hydroxycoumarin content of Sphaeralcea angustifolia, tramadol, acetaminophen,	a. Pharmacologic: duloxetine, topical therapy, DMARDs (Plaquenil, etc.), intraarticular corticosteroids, intraarticular hyaluronic acid, intraarticular platelet-rich plasma/ultrasound-guided intraarticular injections of platelet-rich plasma, doxycycline treatment for erosive osteoarthritis of the hand, glucosamine and chondroitin sulfate, NSAIDs, topical NSAIDs, COX-2-selctive inhibitors, diacerein, arnica (topical), hydroxycoumarin content of Sphaeralcea angustifolia, tramadol, acetaminophen,

	cartilage extract, BioCell Collagen, UP446 b. Non-pharmacological: thermal baths with a sulfide mineral water, exercise therapy, physical therapy, neuromuscular exercise in patients with severe OA of the hip, gluteus medius muscle activity, high-velocity resistance training/low-velocity resistance training, tailored activity pacing, manual therapy, Basic Body Awareness Therapy (BBAT), cognitive behavioral therapy for chronic pain, internet-based pain coping skills training, self-management program, pulsed radiofrequency, acupuncture, Kneipp hydrotherapy, complex ayurvedic treatment c. Any of the above interventions, stratified by duration and/or intensity	cartilage extract, BioCell Collagen, UP446 b. Non-pharmacological: thermal baths with a sulfide mineral water, exercise therapy, physical therapy, neuromuscular exercise in patients with severe OA of the hip, gluteus medius muscle activity, high-velocity resistance training/low-velocity resistance training, tailored activity pacing, manual therapy, Basic Body Awareness Therapy (BBAT), cognitive behavioral therapy for chronic pain, internet-based pain coping skills training, self-management program, pulsed radiofrequency, acupuncture, Kneipp hydrotherapy, complex ayurvedic treatment c. Any of the above interventions, stratified by duration and/or intensity	capsaicin, TNF-inhibitor infliximab, adhesive patches containing Chinese herbal mixtures FNZG and SJG, marhame-aafasel compress (herbal), stinging nettle leaf (topical) b: Non-pharmacological: Occupational therapy (strengthening, splinting, etc), mud-bath treatment, paraffin bath treatment, thermal bath with sulfate-calcium-magnesium-fluoride mineral water, low-level laser therapy (LLLT) c: Any of the above interventions, stratified by duration and/or intensity	capsaicin, TNF-inhibitor infliximab, adhesive patches containing Chinese herbal mixtures FNZG and SJG, marhame-aafasel compress (herbal), stinging nettle leaf (topical) b: Non-pharmacological: Occupational therapy (strengthening, splinting, etc), mud-bath treatment, paraffin bath treatment, thermal bath with sulfate-calcium-magnesium-fluoride mineral water, low-level laser therapy (LLLT) c: Any of the above interventions, stratified by duration and/or intensity
Comparators	Placebo/sham controls, other active interventions	Placebo/sham controls, other active interventions	Placebo/sham controls, other active interventions	Placebo/sham controls, other active interventions
Outcomes	Reduced pain, improved function/mobility, QoL, functional status measures (including Western Ontario and McMaster Universities Arthritis Index [WOMAC] scores), other clinical outcomes	Adverse events	Reduced pain, improved function/mobility, QoL, functional status measures (including Western Ontario and McMaster Universities Arthritis Index [WOMAC] scores), other clinical outcomes	Adverse events

Methods

To assess topic nomination *#0712 Treatments for Hip and Hand Osteoarthritis* for priority for a systematic review or other AHRQ EHC report, we used a modified process based on established criteria. Our assessment is hierarchical in nature, with the findings of each step in our assessment determining the need for further evaluation of the next step. Details related to our assessment are provided in Appendix A.

1. Determine the *appropriateness* of the nominated topic for inclusion in the EHC program.
2. Establish the overall *importance* of a potential topic as representing a health or healthcare issue in the United States.
3. Determine the *desirability of new evidence review* by examining whether a new systematic review or other AHRQ product would be duplicative.
4. Assess the *potential impact* a new systematic review or other AHRQ product.
5. Assess whether the *current state of the evidence* allows for a systematic review or other AHRQ product (feasibility).
6. Determine the *potential value* of a new systematic review or other AHRQ product.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance (see Appendix A).

Desirability of New Review/Duplication

We searched for high-quality, completed or in-process evidence reviews pertaining to the key questions of the nomination. Table 2 includes the citations for the reviews that were determined to address the key questions.

Impact of a New Evidence Review

The impact of a new evidence review was assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether a new review could influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Feasibility of a New Evidence Review

We conducted a literature search in PubMed from November 2011 to March 2017 (Appendix B). From 958 results, studies were separated into therapies for hand OA, therapies for hip OA, and therapies for general OA. All 154 results for hand OA and 37 results for general OA were reviewed. Of the 767 results for hip OA, 430 were removed for examining surgical options. All 337 remaining results for hip OA were reviewed for inclusion. See *Table 2, Feasibility Column, Size/Scope of Review Section* for the citations of included studies.

Value

We assessed the nomination for value (see Appendix A). We considered whether a partner organization could use the information from the proposed evidence review to facilitate evidence-based change; or the presence of clinical, consumer, or policymaking context that is amenable to evidence-based change.

Compilation of Findings

We constructed a table outlining the selection criteria as they pertain to this nomination (see Appendix A).

Results

Appropriateness and Importance

This is an appropriate and important topic. OA effects approximately 30.8 million Americans, according to the CDC,[1] and the average direct cost of OA per patient per year is $2,600, with total (direct + indirect) costs estimated around $5,700 per patient per year.[1]

Desirability of New Review/Duplication

An AHRQ systematic review on the treatments for hip and hand OA would not be duplicative. We identified 12 complete or in-process reviews/meta-analyses— one review examining physical and occupational therapy for hand OA, and eleven complete or in-process evidence reviews/meta-analyses covering specific interventions for hip OA. The interventions examined in these eleven hip OA evidence reviews are platelet-rich plasma, opioid therapy, exercise and physical therapy, manual therapy, and high- and low-velocity resistance training. Most of the interventions of interest to the nominators are not included in these reviews.

Impact of a New Evidence Review

The nomination has moderate impact potential. The ACR published guidelines for nonpharmacological and pharmacologic therapies for hand, hip, and knee OA in 2012, using GRADE and a panel consensus. Their recommendations for both pharmacologic and nonpharmacological therapies for hand OA and pharmacologic therapies for hip OA were “not strong” at that time. The ACR guidelines for non-pharmacological therapies for hip were “strong” recommendations. A recommendation of “not strong” may indicate a knowledge gap that a new evidence review may address. By the time an AHRQ evidence review on this topic would be complete, the ACR guidelines will be more than five years old and in need of updating.

Feasibility of a New Evidence Review

A new evidence review is feasible at this time. Our search of PubMed resulted in 958 unique titles. 430 results were excluded because they examined surgical procedures. Upon title and abstract review of the remaining 528 results, we identified 93 studies relevant to the key questions, 52 of which were RCTs. Among these included studies were several interventions of interest to the nominator that were not found in our search for systematic reviews. These include NSAIDs and COX-2-selective inhibitors, topical therapies, hydrotherapy, splinting, and corticosteroid injections, among others. We found studies examining 18 different pharmacologic treatments for hip OA, 11 non-pharmacological treatments for hip OA, 11 pharmacologic treatments for hand OA, and 10 non-pharmacologic treatments for hand OA.

Pharmacologic interventions for hip OA include diclofenac, celecoxib, and injections of platelet-rich plasma and hyaluronic acid. Nonpharmacologic interventions include web-based and in-person physical activity, physical/manual therapies, and acupuncture. Identified studies for pharmacologic interventions for hand OA are like those found for hip—hyaluronic acid injections, diclofenac, and naproxen, to name a few—however, non-pharmacological interventions for hand OA differed vastly from hip. They included splints/orthotics, paraffin and mud baths, immobilization, and hand exercises.
Our search of ClinicalTrials.gov resulted in 23 relevant trials that have been completed in the last two years or are projected to be completed in the next two years. See *Table 2, Feasibility* column for the citations that were determined to address the key questions.

Table 2. Key question with the identified corresponding evidence reviews and original research

Key Question	Duplication (Completed or In-Process Evidence Reviews)	Feasibility (Published and Ongoing Research)
1a: Hip OA--Pharmacologic	Total number of completed or in-process evidence reviews: 4 • Cochrane: 1[2] • Meta-Analysis of RCTs: 2[3,4] • Other Protocol: 1[5]	Size/scope of review Relevant Studies: 24 • RCT: 11[6-16] • Prospective Cohort: 4[17-20] • Prospective Multicenter: 2[21,22] • Open-Label: 6[23-28] • Survey: 1[29] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 5 • Recruiting: 1[31] • Active, not recruiting: 1[32] • Complete: 3[33-35]
1b: Hip OA—Non-pharmacologic	Total number of completed or in-process evidence reviews: 7 • Cochrane: 3[36-38] • Other: 1[39] • Cochrane Protocol: 1[40] • Other Protocol: 2[41,42]	Size/scope of review Relevant Studies: 29 • RCT: 18[43-60] • Prospective Cohort: 7[61-67] • Prognostic Study: 1[68] • Controlled Pre-Post: 1[69] • Survey: 2[70,71] • Post Hoc Analysis: 1[72] ClinicalTrials.Gov Relevant Trials: 11 • Recruiting: 6[73-78] • Active, not recruiting: 1[79] • Complete: 4[80-83]
1c: Hip OA—Duration and Intensity	Total number of completed on in-process evidence reviews: 2 • Cochrane: 1[37] • Meta-Analysis of RCTs: 1[4]	Size/scope of review Relevant Studies: 17 • RCT: 10[7,12-14,45,48,49,51,53,58] • Prospective Cohort: 3[18,62,65] • Open-Label: 3[25,26,28] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 3 • Recruiting: 3[73,76,78] • Active, not recruiting: 1[32] • Complete: 2[35,80]
1d: Hip OA--Subgroups	Total number of completed on in-process evidence reviews: 1 • Other: 1[39]	Size/scope of review Relevant Studies: 19 • RCT: 9[7,9,12,43,46-48,54,58] • Prospective Cohort: 6[17,19,61-63,66] • Prospective Multicenter: 1[21] • Open-Label: 1[24] • Prognostic Study: 1[68] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 10 • Recruiting: 4[73,75,77,78]

Key Question	Duplication (Completed or In-Process Evidence Reviews)	Feasibility (Published and Ongoing Research)
		• Active, not recruiting: 2[32,79] • Complete: 4[33,34,82,83]
2a: Hip OA—Pharmacologic Harms	Total number of completed on in-process evidence reviews: 3 • Cochrane: 1[2] • Meta-Analysis of RCTs: 2[3,4]	Size/scope of review Relevant Studies: 20 • RCT: 7[6,11-16] • Prospective Cohort: 5[17,18,20,65,84] • Prospective Multicenter: 2[21,22] • Open-Label: 5[23,24,26-28] • Survey: 1[29] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 5 • Recruiting: 1[31] • Active, not recruiting: 1[32] • Complete: 3[33-35]
2b: Hip OA—Non-pharmacologic Harms	Total number of completed on in-process evidence reviews: 3 • Cochrane: 3[36-38]	Size/scope of review Relevant Studies Identified: 4 • RCT: 3[47,56,85] • Prospective Cohort: 1[61] ClinicalTrials.Gov Relevant Trials: 3 • Recruiting: 1[75] • Active, not recruiting: 1[79] • Complete: 1[82]
2c: Hip OA—Duration and Intensity Harms	Total number of completed on in-process evidence reviews: 2 • Cochrane: 1[37] • Meta-Analysis of RCTs: 1[4]	Size/scope of review Relevant Studies: 8 • RCT: 3[12-14] • Prospective Cohort: 2[18,65] • Open-Label: 2[26,28] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 2 • Active, not recruiting: 1[32] • Complete: 1[35]
2d: Hip OA—Subgroups Harms	Total number of completed on in-process evidence reviews: 1 • Other: 1[39]	Size/scope of review Relevant Studies: 8 • RCT: 2[12,47] • Prospective Cohort: 3[17,61,62] • Prospective Multicenter: 1[21] • Open-Label: 1[24] • Retrospective: 1[30] ClinicalTrials.Gov Relevant Trials: 6 • Recruiting: 1[75] • Active, not recruiting: 2[32,79] • Complete: 3[33,34,82]
3a: Hand OA--Pharmacologic	None identified.	Size/scope of review Relevant Studies: 11

Key Question	Duplication (Completed or In-Process Evidence Reviews)	Feasibility (Published and Ongoing Research)
		• RCT: 8[86-93] • Prospective Cohort: 1[94] • Observational Cross-sectional: 1[95] • Post Hoc Analysis: 1[96] ClinicalTrials.Gov Relevant Trials: 2 • Recruiting: 1[97] • Complete: 1[98]
3b: Hand OA—Non-pharmacologic	Total number of completed or in-process evidence reviews: 1 • Other: 1[99]	Size/scope of review Relevant Studies: 21 • RCT: 14[100-113] • Prospective Cohort: 4[114-117] • Retrospective Cohort Analysis: 1[118] • Case Series: 2[119,120] • Cross-sectional case series: 1[121] • Post Hoc Analysis: 1[122] ClinicalTrials.Gov Relevant Trials: 5 • Recruiting: 2[123,124] • Complete: 3[125-127]
3c: Hand OA—Duration and Intensity	Total number of completed or in-process evidence reviews: 1 • Other: 1[99]	Size/scope of review Relevant Studies: 8 • RCT: 5[88,100,109,110,112] • Prospective Cohort: 2[114,115] • Survey: 1[128] ClinicalTrials.Gov Relevant Trials: 2 • Recruiting: 2[123,124]
3d: Hand OA--Subgroups	None identified.	Size/scope of review Relevant Studies: 17 • RCT: 10[86,89,90,92,103,104,106,107,110,111] • Prospective Cohort: 2[94,117] • Observational Cross-sectional: 1[95] • Case Series: 1[119] • Post Hoc Analysis: 3[96,122,129] ClinicalTrials.Gov Relevant Trials: 2 • Recruiting: 1[124] • Complete: 1[126]
4a: Hand OA—Pharmacologic Harms	None identified.	Size/scope of review Relevant Studies: 8 • RCT: 6[86,88-90,92,93] • Observational Cross-sectional: 1[95] • Post Hoc Analysis: 1[96] ClinicalTrials.Gov None identified.
4b: Hand OA—	None identified.	Size/scope of review

Key Question	Duplication (Completed or In-Process Evidence Reviews)	Feasibility (Published and Ongoing Research)
Non-pharmacologic Harms		Relevant Studies: 8 • RCT: 6[105-107,110-112] • Case Series: 1[119] • Post Hoc analysis: 1[122] ClinicalTrials.Gov None identified.
4c: Hand OA—Duration and Intensity Harms	None identified.	Size/scope of review Relevant Studies: 3 • RCT: 3[88,110,112] ClinicalTrials.Gov None identified.
4d: Hand OA—Subgroups Harms	None identified.	Size/scope of review Relevant Studies: 12 • RCT: 6[86,89,90,92,106,111] • Prospective Cohort: 1[117] • Observational Cross-sectional: 1[95] • Case Series: 1[119] • Post Hoc Analysis: 3[96,122,129] ClinicalTrials.Gov None identified.

Abbreviations: OA=Osteoarthritis; RCT=Randomized Controlled Trial

Value

The nomination has a high value potential, given that the ACR and the ACP will use a new AHRQ systematic review to update their 2012 guidelines.

Summary of Findings

- Appropriateness and importance: The nomination is both appropriate and important.
- Duplication: An AHRQ systematic review on the treatments for hip and hand osteoarthritis (OA) would not be duplicative. We identified 12 complete or in-process reviews/meta-analyses—one review examining physical and occupational therapy for hand OA, and eleven complete or in-process evidence reviews/meta-analyses covering specific interventions for hip OA. The interventions examined in these eleven hip OA evidence reviews are platelet-rich plasma, opioid therapy, exercise and physical therapy, manual therapy, and high- and low-velocity resistance training. Most of the interventions of interest to the nominators are not included in these reviews.
- Impact: The nomination has moderate impact potential. The ACR published guidelines for nonpharmacological and pharmacologic therapies for hand, hip, and knee osteoarthritis in 2012, using GRADE and a panel consensus. An updated review could inform evidence gaps for recommendations that were not considered strong, particularly related to therapies for hand OA, hip OA. A recommendation of "not strong" may indicate a knowledge gap that a new evidence review may address. By the time an AHRQ evidence review on this topic will be complete, the ACR guidelines will be more than five years old and in need of updating.
- Feasibility: An AHRQ evidence review is feasible at this time.

    - *Size/scope of review:* We identified 93 studies potentially relevant to the key questions in the nomination.
    - *Clinicaltrials.gov:* We identified 23 ongoing or recently completed trials on ClinicalTrials.gov.
- Value: The nomination has a high value potential, given that the ACR and the ACP will use a new AHRQ systematic review to update their 2012 guidelines.

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Appendices

Appendix A: Selection Criteria Summary

Appendix B: Search Strategy & Results (Feasibility)

Appendix A. Selection Criteria Summary

Selection Criteria	Supporting Data
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the U.S.?	Yes, this topic represents health care drugs and interventions available in the U.S.
1b. Is the nomination a request for a systematic review?	Yes, this topic is a request for an AHRQ systematic review.
1c. Is the focus on effectiveness or comparative effectiveness?	The focus of this review is on both effectiveness and comparative effectiveness.
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes, it is biologically plausible. Yes, it is consistent with what is known about the topic.
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Yes, this topic represents a significant burden. OA effects approximately 30.8 million Americans, according to the CDC.[1]
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes, this topic affects heath care decisions for a large, vulnerable population. An estimated 33.6% of Americans 65 and older suffer from OA.[1]
2c. Represents important uncertainty for decision makers	Yes, this topic represents important uncertainty for decision makers. Guidelines for this rapidly changing field are from 2012, and are in need of a systematic review to update.
2d. Incorporates issues around both clinical benefits and potential clinical harms	Yes, this nomination addresses both benefits and potential harms of treatments for hip and hand OA.
2e. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes, according to the CDC, the average direct cost of OA per patient per year is $2,600, with total (direct + indirect) costs estimated around $5,700 per patient per year.
3. Desirability of a New Evidence Review/Duplication	
3. Would not be redundant (i.e., the proposed topic is not already covered by available or soon-to-be available high-quality systematic review by AHRQ or others)	An evidence review on the topic would not be redundant. We identified twelve evidence reviews/meta analyses fitting the scope of the nomination. Eleven reviews were about pharmacologic and non-pharmacological interventions for hip OA. The pharmacologic treatments covered include intraarticular platelet-rich plasma injections and opioid therapy. The non-pharmacological options addressed by the identified evidence reviews include exercise therapy, physical therapy, high-velocity resistance training/low-velocity resistance training, and manual therapy. One evidence review examined physical and occupational therapy for hand OA.
4. Impact of a New Evidence Review	

4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)?	The standard of care is not unclear. The guidelines are four years old, however they are consistent with what is known about treatments for OA. A new evidence review will provide additional evidence to a previously-lacking evidence base.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	Yes, there is practice variation due to limited evidence from previous guidelines.
5. Primary Research	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies)	We identified 93 unique studies relevant across all key questions published in the past 5 years. These studies included a wide variety of interventions. We found studies examining 18 different pharmacologic treatments for hip OA, 11 non-pharmacological treatments for hip OA, 11 pharmacologic treatments for hand OA, and 10 non-pharmacologic treatments for hand OA. All key questions have identified literature. Additionally, we identified 23 trials on ClinicalTrials.gov—16 related to hip and 7 related to hand.
6. Value	
6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change	The proposed topic exists with a clinical, consumer, and policy-making context that is amendable to evidence-based change. AHRQ has previously published evidence reviews on therapies for OA.
6b. Identified partner who will use the systematic review to influence practice (such as a guideline or recommendation)	Yes, the ACR and ACP will develop evidence-based guidelines based on the results of an AHRQ evidence review.

Abbreviations: ACP=American College of Physicians; ACR=American College of Rheumatology; AHRQ=Agency for Healthcare Research and Quality; CDC=Centers for Disease Control and Prevention; OA=Osteoarthritis

Appendix B. Search Strategy & Results (Feasibility)

Topic: Osteoarthritis of the Hand or Hip Date: November 15, 2016 Database Searched: MEDLINE (PubMed)	
Concept	Search String
Hip Osteoarthritis	(((osteoarthritis[Title]) AND hip[Title])) OR "Osteoarthritis, Hip/therapy"[Majr]
OR	
Hand Osteoarthritis	(((((hand[Title/Abstract] OR finger[Title/Abstract] OR fingers[Title/Abstract] OR thumb[Title/Abstract] OR wirst[Title/Abstract] OR metacarpus[Title/Abstract])))) OR "Hand"[Mesh])) AND ((osteoarthritis[Title]) OR "Osteoarthritis/therapy"[Mesh:NoExp])
AND	
Therapy	(("Therapeutics"[Mesh] OR "therapy" [Subheading])) OR ((therapy[Title/Abstract] OR drug[Title/Abstract] OR pharmacologic[Title/Abstract] OR non-pharmacologic[Title/Abstract] OR treatment[Title/Abstract] OR management[Title/Abstract] OR care[Title/Abstract]))
NOT	
Not Editorials, etc.	((((((("Letter"[Publication Type]) OR "News"[Publication Type]) OR "Patient Education Handout"[Publication Type]) OR "Comment"[Publication Type]) OR "Editorial"[Publication Type])) OR "Newspaper Article"[Publication Type]
Limit to last 5 years ; human ; English ; Adult	Filters activated: published in the last 5 years, Humans, English, Adult: 19+ years
N= 958	
Systematic Review **N=36**	PubMed subsection: Systematic [sb]
Randomized Controlled Trials **N=352**	Cochrane Sensitive Search Strategy for RCT's: (((((((groups[tiab])) OR (trial[tiab])) OR (randomly[tiab])) OR (drug therapy[sh])) OR (placebo[tiab])) OR (randomized[tiab])) OR (controlled clinical trial[pt])) OR (randomized controlled trial[pt])
Other **N=570**	

138 studies found for: hand OR hip | **Recruiting** | osteoarthritis | Adult, Senior | Studies received from 11/15/2011 to 11/15/2016
https://clinicaltrials.gov/ct2/results?term=hand+OR+hip&recr=Recruiting&type=&rslt=&age_v=&age=1&age=2&gndr=&cond=osteoarthritis&intr=&titles=&outc=&spons=&lead=&id=&state1=&cntry1=&state2=&cntry2=&state3=&cntry3=&locn=&rcv_s=11%2F15%2F2011&rcv_e=11%2F15%2F2016&lup_s=&lup_e=

42 studies found for: hand OR hip | **Active, not recruiting** | osteoarthritis | Adult, Senior | Studies received from 11/15/2011 to 11/15/2016
https://clinicaltrials.gov/ct2/results?term=hand+OR+hip&recr=Active%2C+not+recruiting&type=&rslt=&age_v=&age=1&age=2&gndr=&cond=osteoarthritis&intr=&titles=&outc=&spons=&lead=&id=&state1=&cntry1=&state2=&cntry2=&state3=&cntry3=&locn=&rcv_s=11%2F15%2F2011&rcv_e=11%2F15%2F2016&lup_s=&lup_e=

120 studies found for: hand OR hip | **Completed** | osteoarthritis | Adult, Senior | Studies received from 11/15/2011 to 11/15/2016
https://clinicaltrials.gov/ct2/results?term=hand+OR+hip&recr=Completed&type=&rslt=&age_v=&age=1&age=2&gndr=&cond=osteoarthritis&intr=&titles=&outc=&spons=&lead=&id=&state1=&cntry1=&state2=&cntry2=&state3=&cntry3=&locn=&rcv_s=11%2F15%2F2011&rcv_e=11%2F15%2F2016&lup_s=&lup_e=